لا إله إلا الله محمد رسول الله

إن الدين عند الله الإسلام

THE REVIEW OF RELIGIONS

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IHSAN 1360—JUNE 1981

EDITOR

M. G. AHMAD

The Ahmadiyya Movement

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Hazrat Mirza Ghulam Ahmad, was born in 1835 in Qadian, a village in India. In the eighties of the 19th century, he was called to the office of World Reformer to combat the false Religious Philosophies and to explode the Christian theory of redemption based on the fiction of Christ's death on the Cross and to tell the Christians and Muslims to call off their hope for a second visit from Christ as he had been gathered to his fore-fathers and barred like all mortals from coming back to the world.

He initiated the Ahmadiyya Movement, to revive faith in God, challenging rival churches to a spiritual contest to seek Divine sanction for the religion He favoured, through prayer and appeal to Him for guidance and arbitration in the matter by means of His signs, to re-establish the glory of the Holy Prophet Muhammad, Peace and blessings be upon him, to expound and disseminate spiritual beauties and moral excellences of the teachings of the Holy Quran, to wean men from war-like tendencies and to educate world opinion in favour of renunciation of war as a means of settling disputes, to infuse hope, faith and courage in the drooping hearts of Muslims and all the depressed races and nations of the world, to warn the exploiters, slave-drivers and pedlars in sin against the evil consequences for their evil ways, to collect under one banner all the true followers of Islam and lovers of peace and to inculcate among them the spirit of tolerance, good-will and selfless fellow-service and a feeling of true brother-hood.

He passed away in 1908 and was succeeded by his foremost votary and closest companion, Hazrat Hafiz Haji Hakim Maulvi Noor-ud-Din. After his death in 1914, Hazrat Haji Mirza Bashir-ud-Din Mahmud Ahmad, was chosen as Head of the Movement. During his 52-year long leadership, he organized a world-girdling chain of mosques and missions. On his death on November 8, 1965 the electoral college named with one accord, Sahibzada Hafiz Mirza Nasir Ahmad as Head of The Ahmadiyya Movement.

For further information about the Movement, its activities, aims, objectives and literature, enquiries may be addressed to the nearest Ahmadiyya Mission or direct to :

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The Review of Religions

A MONTHLY MAGAZINE

This is an organ of the Ahmadiyya Movement. It deals with religious, ethical, social and economic questions. It also provides Book Reviews.

It is open to all for discussing problems vital to the religious and spiritual welfare of man, but it does not give any assurance to publish all articles received by the Editor, nor does it accept responsibility for views expressed by contributors.

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EDITOR

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Notes : Cheques and drafts should preferably be drawn on a Pakistani bank. In case a bill or cheque is drawn on a foreign bank, a collection charge of 50 cents for U. S. A. and 25 N.P. for U.K. should be added to the amount of subscription.

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By Dr. Abdus Salam

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The Review of Religions

RABWAH, PAKISTAN

Vol. LXXVI June 1981—Ihsan 1360 H.S. No. 6

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Notes & Comments

THE HOLY PROPHET OF ISLAM, peace and blessings of Allah be on him, laid great emphasis on the rights of individuals. In his view it was of the utmost importance that every individual should get his right and his due. He insisted that every Muslim must discharge his dues to others and fulfill his trust. He made no distinction between a muslim and a non-muslim. This even applied to an enemy in actual combat.

Once Muhayessa, one of the companions of the Prophet of Islam, was killed in Khaibar. His heirs accused the Jews residing in Khaibar, and filed a suit for blood-money before the Holy Prophet. He asked if they could swear to the identity of the murderer. They replied :

"O Prophet of Allah ! we did not happen to be present at the time of murder how can we testify on oath ?".

The Prophet replied : "You can'nt claim damages without proof. The only alternative under the law is that the Jews

of Khaibar, whom you suspect, should plead not guilty fifty times to the charge to clear their position."

The heirs of the late companion objected :

"The Jews are not reliable, they can easily make false statement and swear to it."

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The Holy Prophet declared :

"Then I cannot do more than this, because the Quranic Law does not allow any discrimination."

It is interesting to note that the Prophet paid the damages to the heirs of Muhayessa out of his own pocket but did not allow the Muslims to do anything against the Jews.

Again, once a few Muslims, who were fed up with the mechinations of the Jews of Khaibar, misappropriated some of their fruits and animals. The Prophet was furious when he came to know this and scolded them saying : "Allah does not allow you to enter the houses of the people of the Book without their permission. Similarly it is absolutely illegal to pluck fruits from their orchards."

Once during the Muslim army's compaigans against the Jews of Khaibar, a shephard who looked after the sheep of a Jew Chief of the Khaibar territory become Muslim...After his conversion he asked the Holy Prophet: "I cannot now return to my people, O Prophet of Allah. What shall I do with the sheep and goats of my former master"?

The Prophet replied : "Set the face of these animals towards Khaibar and give them a push. Allah will lead them back to their master."

The shephered did as he was instructed and the herd reached the fort of Khaibar.

Even in these days of enlightenment and knowledge, of civilization and culture can we show a parallel. Has it ever happened that the stores and provisions left behind by the retreating army are returned to their owners? In the above quoted incident the sheep and goats belonged to one of the combatants of the enemy army. The return of animals meant maikng over to the besieged enemy food which would last them

for several months. With it the enemy could resist the siege for a long time. Yet the Prophet of Islam had the goats returned. This was in order to impress upon his followers the importance of discharging a trust and of protecting the rights of individual no matter who he is.

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THE QUESTION OF THE STATUS OF WOMAN IN ISLAM

is much exploited by the critics of Islam. By representing a distorted version of the institution of *Hijab* or *Puraah* the western orientalists and Christian missionaries have criticised Islam. They have tried to give a very distorted picture of the manner in which the Muslim women are treated in the society. Without going into details here, we are narrating an incident from the life of the Holy Prophet of Islam, peace and blessings of Allah be on him, which throws ample light on the question of women's status in Islam.

It is reported that once while the Holy Prophet was among his companions, one of them informed him of the serious condition of Alqama—another companion. The Holy Prophet sent someone to enquire about his health. The messenger returned and said to him: "Prophet of God, his condition is very critical, and he seems to be in the last throes of death." The Prophet felt grieved at the sad news. He enquired whether Alqama's mother was alive. Learning that she was alive the Prophet told one of the companions to go to her and tell her that the Prophet wanted to see her. He further told him that if she was unable to come to him, he would go and see her. On hearing the Prophet's summons the woman hurried to see him. After exchanging greetings the Prophet bade her sit down and then enquired about the health of her son. The mother said: "His condition is indeed very painful. He is in the last throes of death but the agony is prolonged and death does not end his pain. I can't explain the anguish he is undergoing." The Prophet asked her: "Can you tell me what has he done to merit such terrible pain and suffering?" The weeping mother said:

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"I do not think of any such thing. He is a good, pious, God-fearing man, who offers his prayers regularly and leads his life according to Allah's Commandments". The Prophets said: "Maybe he has annoyed you in some way or the other which is the cause of his pain and anguish?" The grieved mother replied in the affirmative, saying: "My son would always side with his wife against me and would never care for my pleasure of displeasure." The Prophet observed, "By disobeying you your son has earned this punishment." Then addressing those near him, he said "Beware! This is what happens to one who annoys and displeases his mother." Alqama's mother began crying and said: "Prophet of God, I forgive him and pray to the Gracious God to forgive him and have mercy on him. On hearing this some of companions went to see Alqama on the bidding of the Holy Prophet. They found a definite change in his condition, he was now quite calm and comforted, asking forgiveness of Allah and seeking his mother's pardon. After a few moments he, peacefully and painlessly, breathed his last. The Prophet accompanied the funeral procession and took part in his last rites. He then prayed for his soul and advised the people gathered there to learn a lesson from the incident and to try to be polite, obedient, and kind to their mothers. He further said: "Try to win your mother's pleasure and never do anything which causes her discomfort."

We wounder how the followers of a Faith whose Founder is reported to have avoided seeing his mother when she came to visit him, saying: "Who is my mother? and who are my brethren?" and then himself answered the question by pointing towards his disciples and observed: "Behold my mother and my brethern," and all this, while the mother stood outside waiting patiently for his son's permission to see him, can accuse the Holy Prophet of Islam of demeaning the status of women, whose life is replete with incidents such as one quoted above, and who would always welcome even his foster-mother by saying: 'Umi, Umi,' my mother, my mother! would stand up to receive her, would vacate his own place for her and would do

everything possible for her pleasure and comfort !

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ACCORDING TO THE NEWS PUBLISHED IN PAKISTANI PRESS, a fresh wave of violence has swept over the Behar Province of India. A week-long anti-Muslim riots have claimed fifty innocent lives and large scale destruction of property.

Reports of attacks by the majority on the Muslim minority of Handwara in occupied Kashmir have also been received from across the border. The grievances of yet another minority were recently voiced at the 54th Sikh Educational conference, held at Chandigarh in March 1981, which has invented a new word "majoritarianism" to describe the arrogant ways of the Hindu majority.

The intercommunal relationships in India are fast deteriorating and the situation, is and has been, since the independence of the sub-continent, in total contrast to the peaceful and peace living secularist image of India which is presented to the world by the followers of the Ghandism. The intermittent cruption of violence against the largest minority, the disturbing backwardness of Muslim community in all the spheres of life, a sense of insecurity and danger experienced by members of the minority and a feeling of being second class citizens in educational, economic, social and political life of the country, all these factors contribute to communal disharmony. It is high time that the reasonable and conscientious element in the majority did something about it.

All this communal unrest, the ruthless intolerance of the minority, the utter disregard for its rights would never have happened if the world had followed the teachings of Islam on this question, which were very aptly summed up by Hazrat Ali, God be pleased with him, "There is no distinction between the rights of a Muslim and a non-muslim——The Majority and the Minority——in a Muslim State."

According to the reports published in the press, **POPE JOHN PAUL II** made one of his strongest condemnations of abortion on May 10, just a week before Italians vote in a National Referendum on the issue.

"It is the task and duty of the Church to reaffirm that procured abortion is death, it is the killing of an innocent creature." The Pope said during his sunday address from the balcony of St. Peter's Basilica.

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Addressing 70,000 listeners isn St. Peter's Square the Pope said : "The Church considers any legislation favourable to procured abortion as a very grave offence against man's basic rights and of the divine commandment "Thou shall not kill".

The Holy Quran's stand is clear on the question of abortion. It permits abortion if in the opinion of competent medical authority, the conception would endanger the life of the mother in the event of her giving birth to the child. Even in that case the abortion is permitted as a necessary evil, in order to save a living being in preference to a probable life. Otherwise the Holy Quran forbids abortion. It says :

ولا تقتلوا اولادكم خشية املاق نحن نرزقهم و ايا كم

ان قتلهم كان خطئاً كبيرا

"And slay not your children for fear of poverty. It is We who provide for them and for you. Surely, the slaying of them is a grievous sin." (17 : 32)

The use of word خطئاً (KHITA'AN) by the Holy Quran is very significant. It means the crime committed intentionally, with full knowledge of all its implications. By the use of this word the Holy Quran emphasises the fact that all forms of infanticide, including abortion, are crimes at which human nature recoils and only one who is devoid of human feelings and emotions is capable of committing them.

In the so-called modern society, there is no dearth of persons, especially those in the higher-income group, who resort to abortion to get rid of an unwanted child. The reason

behind this wish, as is usually given by those who resort to it, is the fear of poverty, or in the modern phraselogy, the fear of lowering one's standard of living. This according to the Holy Quran, is a lame excuse. Because it says: "It is We Who provide for them and for you'. i.e. it is not the parents of a child who provide sustenance to him. In reality, it is God Almighty who provides nurishment to all of His creatures. He is *Rabb*, the Sustainer, not only of the parents but also of the children.

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About 122 million children were born in 1979, THE INTERNATIONAL YEAR OF THE CHILD, and one in ten of them was dead within twelve months of his life.

Another five million children, aged between one and four, died the same year, the Executive Board of the United National Children Fund (UNICEF) was told on May 11.

UNICEF Executive Director Mr. James Grant told the opening meeting of the board's annual session that most deaths were from 'preventable' causes, gross poverty and underdevelopment.

A malnourished child without access to even rudimentary health services was, hundreds of times, more likely to die of common diseases of children like measles or diarrhoea than his counterpart in a rich country, Mr. Grant said.

UNICEF's entire budget he observed, was equivalent to the cost of six advanced fighter planes.

It is a pity that all the nations of the world, with all their rich natural resources and with their scientific, industrial and technological progress and development, should devote a miserly sum—equivalent to the cost of only six fighter planes—to the noble cause of health and welfare of the children—the future citizens of the world.

Let us hope that the international community will soon realize the futility of fighter planes and the importance of pro-

viding a better future to the children. May God grant us the courage and the strength to view the things in their true perspective and may He guide us to formulate our policies and make our decisions with a better understanding of the true needs of the humanity.

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The News of the ATTACK ON POPE JOHN PAUL'S LIFE has shocked not only the 750 million Roman Catholics but has aroused a feeling of deep sorrow and grief in every human heart. It was a beastly, immoral act which must be condemned by all those who believe in the brotherhood of man and who wish to rid this world of terror and violence. The kidnappings, hijackings, assassinations and all other forms of terror and violence are fast becoming a standard practice in our daily life. The use of violence as a weapon of political, social and moral blackmail has become an 'accepted' method to gain one's own ends. It is high time that the International Community took stock of the situation and did something about it. Because mere verbal condemnation, unless it is backed by some concrete and practicable. course of action, agreed upon by all the nations of world, would produce no result. Let us hope and pray that all those who wish to make this a better world will join hands and will do something to check the forcess of terror and violence !

The Daily Express in its issue of April 20, 1981, has published a report on the SHROUD OF TURIN by John Raydon which we are reproducing below :

The eyes of a packed congregation at staid St. John's Cathedral, Turin, this Easter weekend wandered in the direction of a silver casket.

It contains a 14ft length of linen cloth bearing the smudged imprint of a man's face, a human figure impregnated with no less than 28 blood stains, nail marks in dull sepia and round

objects over the eyes that agree with ancient Jewish burial custom of sometimes placing coins on closed lids.

This is the world's most hotly-contested relic. If scientifically proven, it could become the tangible symbol of all Christendom ; object of the hopes, cares and pious entreaties of millions of believers the world ever.

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DEVOTIONS

What we, in our human ignorance, have chosen to call the Shroud of Turin.

Coinciding with devotions in this dull north Italian city noted for its car factories, is an exhibition for the first time of some 2,000 photographs taken in 1978, which have just gone on public display in Santa Barbara, California.

From Brooks Institute's Jefferson campus, about 100 miles north of Los Angeles, come the momentus findings of around 40 scientists who have been conducting comprehensive experiments for the past three years : "We can conclude for now that the shroud image is that of a real human being and is not the product of an artist," says Samuel Pellicori, one of the august assembly.

But, adds physicist Larry Schwalbe of Alanos (New Mexico) National Laboratories : "I am still not convinced. I'm still open to the possibility that the image was not caused by a body."

SCORCHED

He says there is a "remote" possibility that the image could have been scorched into the fabric.

Adding, however, to the evidence supporting the shroud's authenticity, Swiss criminologist Max Frei claims to have found 56 varieties of vegetable pollen on the cloth.

He maintains that several types of pollen found only in the south-eastern Mideterranean area were discovered, including pollen from some now extinct desert plants which once flowered only in Palestine 20 centuries ago.

A leading theory contends that skin secretions and burial ointments may have been transferred to the cloth and caused its discolouration. These effects, says Pellicori, can be duplicated in the laboratory—but not with the kind of details on the shroud.

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Professor Pier Luigi Baima Bollone, leading Italian researcher involved in the Vatican-backed investigation, produces the most riveting revelation.

He says that on threads taken from the cloth, he found deposits which had a structure corresponding to the haemoglobin found in blood—but, tantalsingly, he does not specify *human* blood.

The deposits were only on threads taken from areas traditionally believed to be blood stained—where the hands and feet of the man would have been and according to the Gospels, where he was pierced in the side.

Mixed with the alleged blood stains are traces of myrrh and aloe, frequently used for embalming 2,000 years ago. Scientists say the "negative" image, first discovered following photographs permitted of the cloth in 1898, was caused by vapours from the scents and balms applied to a still-warm body.

AUTHENTIC

Concludes Mr. Thomas d'Muhala, head of the team which spent six days examining the shroud in a fresco chamber of the former royal palace in Turin: "Every one of the scientists I have talked to believes that the cloth is authentic.

"We all thought that we would find it was a forgery and would be packing our bags in half-an-hour. Instead all I talked to are convinced that the burden of proof is now on the sceptic"

While the world waited and the scientists—20 of them from America—worked, reports filtering out spoke of the transparent expressions of shock on many of their faces—of their "surprise-a-minute" reactions to findings which appeared to

range far beyond the scope of their scientific briefing.

CONVERTED

They were, frankly, quite awe-struck, the conviction running so deeply that one of their number—a Jew—has subsequently been converted to Christianity.

Historic research has only been able to trace the relic back roughly 600 years, from Turkey to France and finally to the kings of Savoy who eventually ruled Italy, the present ex-King Umberto being its present hereditary guardian.

Hitherto Church authorities have refused to allow the removal of a sample of the cloth for carbon analysis which, upon being burned, would provide indisputable evidence of its age. This ban has now been lifted and a section no bigger than a fingernail will be required.

On such a fragment now rests the onus of scientific credibility, on a relic which is the cornerstone of many Christians' belief.

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A Verse from the Holy Quran

فی قلوبهم مرض فزادهم الله مرضا ولهم عذاب اليم بما كانوا يكذبون

"In their minds was a disease, then Allah caused their disease to grow worse. They will be afflicted with a grievous torment because of their lying." (2 : 11)

So long as the causes of a disease are hidden it is not possible to treat it but on the causes becoming known recourse can be had to every kind of treatment. When prophets have admonished their people in strong language the object has been to jolt them into taking an interest in matters of the spirit, even though their reaction should be hostile. A relationship, even in opposition, may prove helpful. This is one aspect of i In their minds was a disease, then Allah caused their disease to grow worse. Islam will receive strong support one day from people whose interest has been roused by powerful reviving movements and who have begun to study these matters though their attitude at the moment may be one of opposition.

One significant indication in Surah Al-Qadr (Chapter 97) is that when a divinely inspired spiritual Reformer is raised, angels descend from heaven to draw eager people to the truth. Thus, therefore, if in a period of rampant error and indifference towards matters of faith their is a sudden and extraordinary upsurge of interest in the study of these matters, this would be a pointer that a divinely inspired Reformer has risen. Such a movement does not take place without the advent of the Holy Spirit. This movement may be perfect or imperfect. When perfect, it bestows purity and sanity on the soul and brightens the reason and understanding thus predisposing the individual to recognize, accept and support the truth. When imperfect, it does sharpen reason and understanding but lacking purity and sanity the individual is not impelled towards accepting the

truth but merely illustrates : In their minds was a disease, then Allah caused their disease to grow worse. By virtue of reason and understanding being stirred their condition grows worse. That phenomenon has been observed in the time of every Prophet. With the appearance of each Prophet, every individual temperament was stirred through angelic inducement. Then those who loved the truth were drawn to the support of the Prophet. But those who were wedded to mischeif and vice, though they were jolted out of their sleep and paid some heed to the religious upheaval were not drawn to the truth for lack of appropriate capacity. Thus every one is affected by the angelic inducement which accompanies the advent of a spiritual Reformer, but each reacts according to his natural bent, according to whether it is good or wicked. This verse indicates the reaction of this last category.

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(Izalah-i-Auham, Part 1, pp. 104—105)

In their minds was a disease, then Allah caused their disease to grow worse ; that is to say exposed its nature by putting it to the test. (Jang Muqaddas, Third Edition, p. 126)

Concerning these last it is said : Their hearts were afflicted with a disease, then Allah caused their disease to grow worse. The advent of Prophets and Messengers brings to the surface the evil that is dormant in them.

(Al-Hakam, Vol. IX, No. 38, 31 October 1905, p. 4)

When a person is put to the test his true nature is disclosed. At such time any disorder which afflicts his mind becomes acute and destroys him. The disease referred to in the verse comes to a crisis only at such a time. It is a way of Allah that He brings into the open the hidden qualities of peoples' minds. He brings to light the truth and sincerity of a person who has an illumined heart, and discloses the evil and mischief of the wicked. Nothing remains hidden.

(Al-Hakam, Vol. X, No. 1, 10 January 1906, p. 5)

Merely to shun evil is not all that is needed. Our community should not be content with only this much. They

should try to perfect both sides ; to safeguard themselves against evil and to strive after good, through prayer and effort. They should not deem God a simpleten who can be easily hoodwinked He who out of his innate meanness seeks to deceive God by masquerading under the cloak of righteousness should remember that God will humiliate him. The verse : Their hearts were afflicted with a disease, then Allah caused their disease to grow worse ; has reference to such people. Show and hypocrisy are accursed and cannot remain hidden ; they always come out and bring humiliation in their wake. God does not cover up anything ; neither good nor evil. The truly righteous seek to hide the good that they do, but Allah proclaims it. When Moses was told to go as a Prophet to Pharaoh and warn him, he pleaded his lack of merit, for those who are devoted to God shrink from pomp and show. True devotion is not concerned with what people my think. He who entertains the least cocern about that is tainted with polytheism.

(Al-Hakam, Vol. X, No. 25, 17 July 1906, p. 3)

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Eng : *Hazrat Chaudry Muhammad Zafrullah Khan*

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Renaissance of Sciences in Arab and Islamic Lands

DR. ABDUL SALAM

The first Muslim Nobel Laureate in Physics for 1979.

I Deeply appreciate the **honour** done to me by asking me to speak at this symposium Although what I have to say applies to many developing countries including my own, I can say it with intense feeling here, and without fear of being misunderstood. This is because I can claim with you in Kuwait the kinship of Islam, which transcends all other kinships. For this I invoke Blessings of Allah on His Prophet (peace be upon him).

The major theme of my remarks today is pure science. I have to plead with you for giving the highest priority to the creation of knowledge within a scientific common-wealth of Arab and Islamic nations, and to outline the steps needed if we are to take up our rightful self-respecting place among the comity of nations in this regard. But before I speak on this I shall take a few minutes to mention some of the developments in particle physics, particularly those concerning the fundamental forms of energy, and natural forces, with which I have been associated.

Until two decades ago, physicists believed that there are four fundamental forms of energy the gravitational energy, the electromagnetic energy and the two forms of nuclear energy, the so-called weak and the strong Now it is commonplace that all these forms of energy can be made to interconvert : the gravitational, for example, into the electric Hydro-electricity is a manifestation of this. Or the strong nuclear energy produced in the sun's interior, converting into the electromagnetic energy of heat of the sun's rays. Two decades ago, my colleagues and I suggest-

ed that there were indications that the weak nuclear form of energy was basically simply identical with the electro-magnetic. This was not just a matter of inter—conversion of one form of energy into the other ; our result went deeper. In our view, there should be no basic distinction between electricity and nuclear forces. We said they were simply identical. We suggested that under suitable conditions in the laboratory this identity, normally hidden, could be made manifest.

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The first indication of the theory's correctness came in 1973, when the great European Nuclear Research Laboratory at Geneva (CERN) found experimental evidence of neutral currents which are an essential part of the predictions of the theory. The clinching evidence was provided in 1978 by the Stanford Linear Accelerator in the United States which in an epic experiment, confirmed its second aspect—its heart as it were—of the unification of the electromagnetic force with the weak nu lear to one part in four thousand as predicted. An experiment at Novosibirsk by a group led by Professor Barkov further confirmed this. To these and to other great laboratories situated in Europe, the United States and the USSR, I wish to express my appreciation for the remarkable series of experiments which have now confirmed that the weak nuclear force is indeed basically the same as the electromagnetic

Next Task

The next task is to test the third form of energy (the strong nuclear) is also part of this unity. Together with some colleagues, we have formulated this and suggested experiments to test the idea. These experiments have started in the U.S. in Europe and India. If the results are positive, in about three years, with Allah's grace, we shall have demonstrated that all nuclear force—and not just the weak nuclear—is identical with the electric force which binds an atom together.

Then will remain the final goal of uniting the gravitational force with the newly recognised electroenuclear force. The epitome of this 'wahdat' will be to find that the force

which makes an apple fall or which keeps the moon in its orbit—the force of gravity—is an aspect of the same unity of which the electric force or the nuclear forces are part. This sounds incredible today but it is our faith that this must also be true. A precise formulation and the confirmation of this idea—first suggested by Einstein—may take 50 years to achieve. Let me hope and pray that this final challenging problem is resolved by a youg future physicist rrom the land of Islam.

The fact that we have been seeking for a unity among the seemingly desperate forces of nature is part of our faith as physicist and of mine as a Muslim. And to be thus privileged to comprehend a part of Allah's designs is a grace and a privilege for which I render humble thanks to Allah.

ذالك فضل الله يؤتيه من يشاء و الله ذوالفضل العظيم (62 : 5)

On the occasion of the Prize ceremony in December 1979. I was asked to reply on behalf of the Physics Prize Winners to the Banquet address of His Majesty the King of Sweden in the great and glittering Banqueting Hall of Stockholm. With your indulgence, I shall read out part of what I said, for it bears on this faith in the ultimate unity and symmetry of Nature. "The creation of physics is the shared heritage of all mankind. East and West North and South have equally participated in it. In the Holy Book of Islam, Allah says :

ما ترى فى خلق الرحمن من تفاوت فارجع البصر هل ترى

من فطور ثم ارجع البصر كرتين ينقلب اليك البصر

خاسئا و هو خبير

'Thou seest not in the creation of the All-Merciful any imperfcction. Return thy gaze, seest thou any flaw, Then return thy gaze, again and agaia. Thy gaze comes back to thee dazzled, aweary.' (67 : 4-5)

This, in effect, is the faith of all physicists, the faith which fires and sustaias us ; the deeper we seek, the more is our wonder excited, the more is the dazzlement for gaze.

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I am saying this not only to remind those here tonight of this, but also for those in the Third World, who feel they have lost out in the pursuit of scientific knowledge for lack of opportunity and resource.

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To emphasise that science is the shared heritage of mankind, and that the history of scientific discovery, like the history of all civilisation, has gone through cycles, I recalled in my Noble lecture a historical episode, when, some seven hundred and sixty years ago, a young Scotsman left his native glens to travel south to Toledo in Spain. His name was Michael, his goal to live and work at the Arab universities of Toledo and Cordova Michael reached Toledo in 1217 A.D. Once in Toledo, Michael formed the ambitious project of introducing Aristotle to Latin Europe, translating not from the original Greek, which he knew not but from the Arabic translation which was then taught in Spain. From Toledo, Michael travelled to Sicily, to the court of Emperor Frederick II. Visiting the medical school at Salerno, chartered by Frederick in 1231, Michael met the Danish physician. Hendrik Harpestraeng—later to become the court physician of King Eric IV Waldemarsson. Hendrick the Dane had come to Salerno to compose his treatise—preserved in seven volumes at the National Library in Stockholm—on blood-letting and surgery. Hendrik's sources were the medical canons of the great clinicians of Islam, Al-Razi and Avicenna, which only Michael the Scot could translate for him.

The schools of Toledo and Salerno mark the beginning of creation of sciences in the West. At these schools a candle was lighted from a candle already burning brightly in the lands of Islam.

In respect of this cycle of scientific creation, perhaps I can be more quantitative. George Sarton, in his monumental five-volume History of Science chose to divide his story of achievement to science into ages, each age lasting half century he associated one central figure. Thus, 450-400 B.C., Sarton

calls the Age of Plato ; this is followed by half centuries of Aristotle, of Euclid of Archimedes, and so on. From 600 A.D. to 700 A.D. is the Chinese century of Hsiian Tsang and I Ching and then from 750 A.D. to 1100 A.D —350 years continuously—it is an unbroken succession of the Ages of Jabir, Khwarizmi, Razi, Masudi Wafa, Biruni and Avicenna, Ibn-al-Haitham and Omar Khayam—Arabs, Turks, Afghans and Persians—men belonging to the culture and the Commonwealth of Islam. After 1100 A.D. in George Sarton' Story of Sciences, appear the first Western names, Gerard of Cremona, Roger Bacon—but the honours are still shared for another two hundred and fifty years with the names of Ibn-Rushd, Nasir-ud-Din Tusi and Ibn-Nafis—the man who anticipated Harvey's theory of circulation of blood.

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After 1350, however, the Islamic world loses out except for the very occasional flash of scientific brilliance, like that at the Court of Ulugh Beg—the grandson of Emir Timur—in Samrkand in 1437 A.D., with Emir Ulugh Beg himself participating equally with his astronomers in scientific debate and sharing in the excitement of discovery. And finally there is tne compilation of Zijj Muhammad Shahi at the court of the Mughul Emperor of Delhi in 1720 which corrected the best European tables of that day by as much as 6 of arc. But these contributions notwith-standing, the main scientific tradition was no longer alive and vigorous ; long long before it had turned inwards and ossified.

And this brings us to this century when the cycle begun by Michael the Scot turns full circle, and it is we in the Islamic and Arab world who turn Westwards for stimuli in scientific creation.

Eleven hundred years ago Al-Kindi wrote : "It is fitting then for us not to be ashamed to acknowledge truth and to assimilate it from whatever source it comes to us. For him who seales the truth there is nothing of higher value than truth itself ; it never cheapens nor abases him who seeks." Al-Kindi

was right—truth is truth wherever it is discovered. Yet how can I convey to you the very human urge Allah has given all of us to be among those privileged to discover of His design, of the prayer He has taught us to recite. Let me recall just one human moment of scientific history ; the story of Hans Rethe, the Nobel Laureate in Physics for 1967. The day he discovered the carbon cycle which explains the secret of the clossal energy production of stars, and for which he was awarded the Prize, Bethe and his wife were staying in a desert location in New Mexico. During the starry desert night Rose Beth recalls remarking to her husband how bright the stars in the firmament were. Bethe replied : "Do you realise, just now you are standing next to the only human who knows why they shine at all."

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But why did we in Islamic lands lose out ? No one knows for certain. There were indeed external causes, like the devastation caused by the Mongols, but, grievous though it was, perhaps more in the nature of a temporary interruption. Sixty years after Ghengiz, his grandson, Halagu was founding an observatory at Maragha. In my humble view, the demise of living science within the Islamic commonwealth was more due to internal causes. I shall not analyse these here today. But to illustrate the apathy that had come over us I shall quote from Ibn i-Khaldun, one of the greatest social historians and the brightest intellects of all times, who wrote one hundred and seventy years after the journeys which Michael the Scot and Hendrik the Dane had undertaken to acquire knowledge from the world of Islam. Ibn i-Khaldun writes in his Muquddima : "We have heard, of late, that in the land of the Franks, and on the northern shores of the Mediterranean there is a great cultivation of philosophical sciences. They are said to be studied there again and to be taught in numerous classes. Existing systematic expositions of them are said to be comprehensive, the people who know them numerous and the students of them very many...' Allah knows beter what exists there but it is clear that the problems of physics are of no

importance for us in our religious affairs. Therefore, we must leave them alone." Ibn-i-Khaldun displays no curtosity, no wistfulness, just apathy, bordering almost on hostility. This apathy led to isolation. The tradition of Al-Kindi of acquiring knowledge from wherever it could be obtained, was forgotten; the Muslim world of science sought no contacts with the West where sciences had now begun to be created. Five centuries before Muslims had avidly sought knowledge, first from the Hellenic and Nestorian colonies of scholars at Jundishapur and Harran, where translations were made from Greek and Syric; then they had founded in Baghdad, Cairo and elsewhere international institutes of advanced study—Bait-ul-Hikmas—and international observatories—the Shamsiyyaa—congregating at these international concourse of scientists from all lands. Such concourses had begun to be assembled now in the West, with Toledos and Salernos where translations were made from the then prestigious language of Science, Arabic. But there was no converse movement in our lands. We isolated ourselves and as everyone knows isolation in sciences is intellectual death.

From Ibn-i-Khaldun's days this intellectual isolation continued, even during the great empires of Islam, the empires of the Osmani Turks, of the Iranian Safvis, and the Indian Moghuls. It is not that the Sultans and Shah-in Shahs were not cognizant of the technological advances being made by the Europeans. They could hardly be unaware of the intrusive superiority of the Venetians or the Genoese in the arts of gun-founding or of the navigational and ship-building skills of the Portuguese who controlled the oceans of the world, including all oceans bordering on Islamic lands, and even the Hajj sea routes.

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They seem never to have realised that the nevigational skills of the Portuguese were not accidental; these had been scientifically developed and sedulously cultivated starting with the research establishment of Sagres set up in 1419 by Prince Henry the navigator. And even while envying and trying to acquire the technologies involved, we failed to understand the

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basic inter-relation between science and technology. As late as 1799, when Selim III did introduce modern studies of algebra, trigonometry, mechanics, ballistics and metallurgy into Turkey, importing French and Swedish teachers, in order to rival the European arts of gun-founding, he failed to place emphasis on basic scientific research in these subjects, so that Turkey never caught up with Europe. Thirty years later Muhammad Ali in Egypt had his men trained in the arts of surveying and prospecting for coal and gold mines, but it did not strike him or his successors to train Egyptians long term in the basic science of gelogy. And even today, when we have come to recognise that technology is the Sustenance and the Power, we have not appreciated that there are no short cuts to it ; that basic science and its creation must become part of our civilisation as a precondition of a mastery of science in application. If one was being Machiavellian, one might discern in the slogan, "Technology without science," sinister motives among those who have sold us this idea.

To underline this let me give just one quotation from a recent issue of the prestigious London "Economist" of 27 September 1980, writing on the cherished mastery of solar energy : "If solar energy is to provide the solution to the world's fuel crisis that solution will not emerge from low-technology roof top radiators—(which) rely on nineteenth century (science). A break-through (will) come from applying quantum physics, biochemistry or other sciences of the twentieth century. Today's technology-based industries all depend on new science."

The reason why the Muslims searched for and developed sciences—in their Golden Age in the 8th, 9th, 10th and 11th centuries—is not hard to seek. The Muslims were following the repeated injunctions of the Holy Book and the Holy Prophet. According to Dr. Mohammad Aijazul Khatib of Damascus University, nothing can emphasis the importance of science more than the remark that "in contrast to 250 verses which are legislative, some 750 verses of the Holy Quran—almost one eighth of it—exhort the believers to study Nature—to reflect, to

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make the best use of reason and to make the scientific enterprise an intergral part of the community's life."

I do not have to remind audience of the proud title of the "Inheritors of the Prohets" which the Holy Prophet accorded to the 'ulema', the men of science and knowledge;

العلماء ورثة الانبياء

In this let me remind you that in the Arabic language, there is no word except 'ilm' for science.

The Holy Quran emphasises the superiority of the 'aalim' the man possessed of science and knowledg :

قل هل يستوى الذين يعلمون والذين لا يعلمون (39 : 10)

It was indeed these exhortations of the Holy Book which made the whole society in Islam scientifically conscious.

A crucial aspect of this veneration was the patronage extended to the creation of sciences in the Islamic-Arab commonwealth. To paraphrase what H.A.R. Gibb has written about Arab literature to the parallel situation for sciences : "To a greater extent than else-where, the flowering of scinces in Islam was conditional.....on the liberality and patronage of those in high positions. Where Muslim society was in decay, science lost vitality and force. But so long as in one capital or another princes and ministers found pleasure, profit or reputation in patronising sciences, the torch was kept burning." This was true, by and large, up to the 14th century. Later this patronage was lost ; symbolic of this was the episode of the blasting of the Observatory at Istanbul by naval ordnance on the orders of Murad III—recorded in almost jubilant verse by Ala-ud-Din Mansur, the court poet, in the 16th century—on the grounds that the observatory's task of correcting the astronomical lables of Ullugh Beg had been accomplished. It was needed no more. And then after this, there was unchecked decline even so that William Eton, the British Consul to the Ottoman Empire, would write in the year 1800 : "No one has the least idea of navigation and the use of the magnet.....Travelling, that great source

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of expansion and improvement to the mind, is entirely checked by arrogant spirit of their religion and.....by the jealousy with which intercourse with foreigners—is viewed in a person not invested with an official character.....Thus the man of general science.....is unknown : anyone, but a mere artificer who should concern himself with the founding of cannons, the building of ships or the like, would be esteemed little better than a madman.'' He concludes with the remark with an ominus modern ring : "They like to trade with those who bring to them useful and valuable articles, without the labour of manufacturing."

Can we turn the pages of history back and once again lead the world in sciences ? I would humbly like to submit that we can—provided society as a whole, and our youth in particular—come to accept this as a cherished goal. In keeping with our own experience of earlier centuries and the experienco of others, we must remember that there are no short cuts. In the conditions of today a nation's youth have to be fired for it and the nation commit itself with a passionate commitment : it must impart hard scientific training to more than half of manpower ; it must pursue basic and applied sciences with 1·2 % of its GNP spent on research and development, least at on.-tenth of this on pure seiences alone. This was done in Japan with the Meiji revolution when the Emperor took an oath that knowledge will be acquired from whereever it can be found from the far corners of the earth. This was done in the Soviet Union sixty years ago when the Soviet Academy of Sciences, created by Peter the Great, was asked to expand its numbers and set the ambition of excelling in all sciences. Today it numbers a self-governing community of one million scientists working in its institutes, with priorities and privileges accorded to them in the Soviet system that others envy. And this is what has been uudertaken today in a planned manner at a frantic speed by the People's Republic of China, with a defined target of catching up and surpassing the United Kingdom in high energy physics, in space sciences, in genetics in micro-electronics, in fusion physics and in control of thermo-nu-

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clear energy. The Chinese have recognised that all basic science is relevant science : that the frontier of today is tomorrow's application and that they must remain at the frontier. In this context one may recall that the GNP of the Islamic-Arab nations exceeds that of China. While the human resources are not significantly smaller. And China has a lead of no more than a few decades over us in sciences. Shall we set ourselves the goal, at the least, of emulating the Chinese ?

I have spoken earlier of patronage for sciences. One aspect of this is the sense of security and continuity which a scientist-scholar must be accorded for his work. Today, an Arab or a Pakistani scentitist and technologist—and there are more than thirty thousand of them—can be sure of life-long welcome in the United Kingdom or the United States if he possesses the requisite quality. He will have security, respect and equality of opportunity for his work and advancement. We must ask ourselves if this is true within our societies. We must ask ourselves if we discriminate against, or even at times terminate the services of scientists because they happen to have originated in a country with which our government may temporarily have differed.

I have spoken throughout this lecture of a Commonwealth of Science, for the Islamic and the Arab countries, even if there may be no political commonwealth of these countries yet in sight. Such a commonwealth of science was a true reality in the great days of Islamic science when the great Central Asians like Ibn Sina and Al-Biruni would naturally write in Arabic, or their contemporary and my brother in physics, Ibn-ul-Haitham, could migrate from his native Basra in the dominions of the Abbasi caliph to the Court of the rival, the Fatmi caliph, al-Hakim, sure of receiving respect and homage, notwithstanding the political and sectarian differences which were no less acute then than they are now. This Commonwealth of Science needs conscious articulation, and recognition once again both spiritually and physically, both by us, the scientists as well as our governments. Today we, the scientists from the Islamic and the

Arab countries, constitute a very small community—one hundredth to one tenth in size, in scientific resources, and in scientific creativity compared to international norms. We need to band together, to pool our resources, to feel and work as a community as is indeed happening in practice. To foster this natural growth could we possibly envisage from our governments a moratorium, a compact conferring of immunity for say the next twenty five years, during which the scientists from within this Commonwealth of Science, this Ummat-ul-Ilm, could be treated as a special sub-community with a protected status, so far as internal and political and sectarian differences are concerned, just as was the case in the Islamic Commonwealth of Science in the past?

And finally, there is the isolation of our scientific effort from international science. It is amazing to find that with the exception of Egypt, which is a member of sixteen unions no other Arab or Islamic country uniformly subscribes to more than five international scientific unions in the diverse subjects of science. No international centres of scientific research have been created or are located with in our confines; few international scientific conferences are organised there: very few of us, if living and working in our own countries, are priviledged to travel to scientific institutions and meetings out side; such travel as a rule, is considered wasteful luxury. The situation is a little better in Arab OPEC countries, it is dismal in non-Arab Islamic lands. It was this isolation which forced me to leave my country twenty-five years ago, after teaching there a number of years. I had a stark choice: either to remain in physics or in Pakistan. With anguish in my heart I left. And this is what prompted me to propose the creation of an International Centre for Physics in Trieste, so that others in my position do not have to make that agonising choice. This Centre belongs to two United Nations agencies—IAEA and UNESCO: one hundred Arab and Muslim physicists are supported at the Centre every year, with funds for them orignating, sadly, not from the Arab and Islamic sources, but by and large from the U.N., from Italy and Sweden.

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And it is not just the physical isolation of the individual scientist that we suffer from. There is also the isolation from the norms of international science, the gulf between the way we run the scientific enterprise in our countries and the self-governing manner it is run in the West or within the community of scientists in the USSR Academy. We seem to have no developed system of professional organisations, no internal review committees, no independent studies of state of art or quality, no science foundations administered by scientists, no independent sources of grants.

To summarise, the renissance of sciences within an Islamic and Arab Commonwealth is contingent upon five cardinal preconditions : passionate commitment, generous patronage, provision of security, self-governance and internationalisation of our scientific enterprise.

And this finally brings me to technology, with the Holy Book of Islam placing equal emphasis on 'taskhir' as on 'tafakkur' —on acquiring mastery of nature, through scientific knowledge as much as on the creation of knowledge. The Holy Book holds forth for us the examples of David and Solomon, with their mastery of the technologies of their day. "And we made iron soft for him...".

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والنالہ الحدید ۔ ان اعمل سبغت (34 : 11, 12)

"We subjected the winds for him" and "under his command he had jinns..." that is, in my humble interpretation, controlled powers of the heavy machinery of the day, which fashioned building blocks, palaces, dams and reservoirs. And then we are reminded of Dhul-qarnain, building defences with blocks of iron and molten copper. Thus are the technologies of metallurgy, heavy construction, technology of wind power and of communications emphasised. As every Muslim knows, the Holy Book does not relate, except as an exhortation for the future and as an example to be followed by the community.

تلك الامثال نضربها للناس لعلهم يتفكرون (59 : 22)

But what are the obstacles in our societies to our acquiring the highest proficiency in technology? After all, never before in human history has so much effort and such magnitude of funds gone into creating technical facilities in such a short duration of time as in the Arab lands during the last decade. Thus, according to Zahlan, by 1978 more than 400 billion dollars, will have been spent on major technological contracts between Arab countries and foreign suppliers. These projects range over hydrocarbons and petrochemicals (160 billions, civil works including transport (80 billions), Industrial plant including iron and steel, pharmaceuticals, fertiliser plant (40 billions).

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Unfortunately, most of these projects have been executed in the technology-free turnkey mode; their execution has had no association, no employment of the incipient research and development community of Arab men of technology and engineering. And one of the reasons has been the fragmentation of the projects.

PETROCHEMICALS

Thus, according to Zahlan, the 584 projects executed by 1976 in the field of petrochemicals were designed by 83 international firms. The projects included 16 for urea plants. Of these, Algeria had 1, Egypt 1, Iraq 2, Kuwait 4, Libya 1, Qatar 2, Saudi Arabia 1, Sudan 1, Syria 1, UAE. 1. No Arab country or combination of countries in the entire Arab Commonwealth had—or now has—the technical base to provide the designs and construction services for these projects, nor the competence to upgrade these and modify them if need arises. As contrasted with this, consider Japan with a population nearly equal in size to the Arab nations, and which entered the field of petrochemicals machinery twenty years ago. Right from the outset the Japanese had made up their minds to export such machinery; thus, during the last twenty years every third Japanese plant has been exported. The Japanese had the will as well as competent men. The situation is no different in other non-Arab Islamic countries, except that relat-

ively the sums involved are smaller, and the number of projects executed fewer.

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What is the reason for lack of attention to the concept of attaining future self-sufficiency in manufacture? The answer is uniformly the same: the decision maker is as a rule a non-technical person; our countries at best are the paradise of the planner, the administrator; the technologist has no part in decision making. In Pakistan, the Planning Commission does not have a science and technology cell. Even worse, inhertiing a tradition from the British Indian Civil Service, it is assumed that a technologist is incapable of taking any but specialised decision; his is not the broad vision; he has no training for such a job. We seem not to have noticed that, in Japan, in China, in Korea, in Sweeden, in France—in all the countries with successful records of self-reliant growth—the completest accord, participation and involvement exists between the scientist, the technologist, and those who run the development machinery of the State and the industry, with full trust in each other's sphere of work.

Besides industrial and science based technology, these is the whole area of science in application, in agriculture, in public health, in biotechnology, in energy systems, and in defence. The story in all these spheres is the same. I remember hearing the late Lord Mountbatten once give a lecture ture to the Royal Society. He was narrating his experience during the war in working with secientists like Sir Solly Zuckerman and the future Noble Laureate, Lord Blackett. Lord Mountbatten recalled that at the first meeting with the scientists in 1939, he presented to them a list of war probleme which the Services had specified for the scientists to solve. Mountbatten recalled Sir Solly Zuckerman simply laughing at the presentation of the list, saying 'Please do not specify what you think are the problems. Take us into your confidance; tell us your objectives and let us define in our own manner the obstacles and the problems. We shall then jointly endeavour to find solutions to meet the precise objectives you have set us."

Why am I so passionately advocating our engaging in this enterprise of creating knowledge. This is not just because Allah has endowed us with the urge to know, this is not just because in the conditions of today knowledge is power and science in application the major instrument of material progress ; it is also that as members of the international world community, onefeels that lash of contempt for us—unspoken, but still there—of those who create knowledge.

I can still recall a Noble Prize Winner in Physics some years ago from a European country say this to me : "Salam do you really think we have an obligation to succour, aid and keep alive those nations who have never created or added an iota to man's stock of knowledge ?" And even if he had not said this, my self-respect suffers a terrible hurt whenever I enter a hospital and find that almost every potent life-saving medicament of today from penicillin upwards has been created without our share of inputs from any of us in the Third World, or from Arab lands or from Islam.

I wish to conclude with two appeals—one to my fellow scientists both those inside our countries and those outside them ; and the second to our rulers and our administrators. First to my brothers, the scientists. We have rights, as well as obligations. We are few in number, the sizes of our communities are invidually sub-critical. This, however, is not so if we band together in an Ummat-ul-ilm. The building up of such a truly Islamic commonwealth and the renaissance of sciences in it depends on us, in the last analysis. For all our quantitative weakness, let us not be the less ambitious, at least as far as quality is concerned, of which there is no dearth whenever opportunities present themselves. I repeat to you what Jamal Abdul Naseer said :

ارفع رأسك يا اخى

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"Raise your head in pride and self-esteem". When I joined Cambridge as an undergraduate in 1946 I was older than my contemporary British students. I knew more science than they

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old. But they possessed an arogance for belonging to the nation of Newton, Maxwell, Darwin, Dirac. Recoll that in your past too, there are men like Ibn-al-Haitham, Ibn-Sina, al-Biruni. Assume that you will be given all the facilities, all the resources you want for pure and applied science. Assume that your applied researches will be utilised. Assume that you will have self-governance within your communities and involvement in you socicty's plans of devolvement. For those outside, assume that you will be called upon to play your designate roles in bringing this renaissance of sciences about. And then make audacious plans for your institutions and proj cts and programmes for the joint Islamic Commonwealth of Science. To mark this ambition and speaking for my own sub-discipline of physics, if China—with a smaller GNP than our countries with a scientific lead of no more than a few decades—can contemplate joining the league of the USA, of combined Europe and of the USSR in building the world's fourth lar_est high-energy accelerator, ahead of Japan; if it can project joining the world, Tokamak Fusion Reactor Project INTOR, expected to produce fusion power in 15 years and costing 1.5 billion dollars: if the Chinese scientists can build the world's most sensitive gravitational-wave de-tecting devices—as they had done in 1978 simply from reproducing the published description of these in the Physical Review: if India with a GNP considerably smaller than ours, can project radio telescopes, cosmic ray arrays, and is now collaborating with Japan in the first deep underground experiment for proton decay—a project in which I personally rejoice—I do not see any reason why our Common-wealth of Sciences shoutd not also contemplate mounting physics as well as physics-based technological projects on the same scale within its confines. I do not see why the lands of Islam should not have the most prestigious institutes in our subject—mathematics. If our own manpower is presently short, let such projects hosted by us be thrown open to research collaborations internationally. We will be the ones to benefit from this, besides praying our due debt back to international science in the same vein, I would like our countries to join as full or

associate members, international enterprises like the fusion INTOR and international Earth Watch projects of ICSU. If Greece, with one-tenth of the GNP of Arab countries, and with scant resources in physics manpower, can aspire to join as a full member the European Organisation for Nuclear Research in Geneva, for an accelerator project which will cost 1/2 billion dollars, designed to produce in the laboratory the heavy photons which our unified theory predicts, I do not see why the Turkish-Arab-Islamic aspiration should be the inferior. With ambition and with involvement will come competence, for this is Allah's promise to all those who strive.

انی لااضیع عمل عامل منکم (3 : 196)

And now finally I wish to appeal to those responsible for our affairs : science is important because of the underlying understanding it provides of the world around us and of Allah's design ; it is important because of the material benefits its discoveries can give us and finally because of its universality, it is a vehicle of co-operation of all mankind and in particular for the Arab and Islamic nations. We owe a debt to international science, which in all self-respect we must discharge. However, the scientific enterprise cannot flourish without your generous patronage as in the past centuries of Islam. The international norms of one to two percent of GNP would mean expenditures of the order of two to four billion dollars annually for the Arab and the same amount for the Islamic world on research and development, one-tenth of this spent on pure science. We need science foundations in our countries run by scientists, international higher centres of learning within and without our universities, providing generous support security and continuity, for men and their ideas. Let no future Gibb record that in the fifteenth century of the Hijra the scientists were there but there was a dearth of princes with their generous patronage.

ربنا و اتنا ما وعدتنا علی رسلك و لا تخزنا یوم القیامة (3 : 195)

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Printed at the Nusrat Art Press by Malik Basharat Ahmad and published by M. Masud Ahmad B. A. Rabwah, Pakistan, from the office of the Review of Religions, Darulsadar, Rabwah.